Schneider Electric

Installation Manual

UPS Network Management Card 2

AP9630, AP9631

This manual is available in English on the APC Web site (www.apc.com).

Dieses Handbuch ist in Deutsch auf der APC Webseite (www.apc.com) verfügbar.

Este manual está disponible en español en la página web de APC (www.apc.com).

Ce manuel est disponible en français sur le site internet d'APC (www.apc.com).

Questo manuale è disponibile in italiano sul sito web di APC (www.apc.com).

Este manual está disponível em português no site da APC (www.apc.com).

Данное руководство на русском языке доступно на сайте APC (www.apc.com)

本マニュアルの日本語版は APC ウェブサイト（www.apc.com）からダウンロードできます。

APC 웹싸이트 (www.apc.com) 에 한국어 매뉴얼 있습니다 .

在 APC 公司的网站上（www.apc.com）有本手册的中文版。

This manual is available in English on the enclosed CD.

Dieses Handbuch ist in Deutsch auf der beiliegenden CD-ROM verfügbar.

Este manual está disponible en español en el CD-ROM adjunto.

Ce manuel est disponible en français sur le CD-ROM ci-inclus.

Questo manuale è disponibile in italiano nel CD-ROM allegato.

Este manual está disponível em português no CD fornecido.

Данное руководство на русском языке имеется на прилагаемом компакт-диске.

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동봉된 CD 안에 한국어 매뉴얼이 있습니다 .

您可以从包含的 CD 上获得本手册的中文版本。

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How to Avoid Equipment Damage

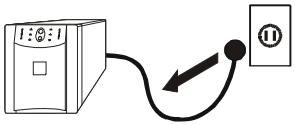
Disconnect power for Smart-UPS or expansion chassis

You do not need to turn off a Symmetra® or MGE® Galaxy® UPS to install the UPS Network Management Card 2 (NMC).

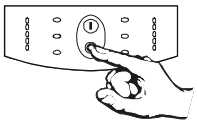
Damage to the UPS or NMC can result if you do not remove all AC and DC power from a Smart-UPS®, an Expansion Chassis, or a Triple Expansion Chassis before you install the Network Management Card.

Smart-UPS.

1. Turn off the equipment that connects to the UPS.
2. Disconnect the UPS from its AC input source.



3. Press the OFF button on the UPS for approximately five seconds to turn off the DC (battery) power.



Expansion chassis. Make sure that the Expansion Chassis or Triple Expansion Chassis is disconnected from any power source:

1. Disconnect the chassis cable from the UPS.
2. If the chassis uses an AC adapter (AP9505), disconnect that adapter from the chassis.

Preliminary Information

Features

The Schneider Electric UPS Network Management Cards 2 (AP9630 and AP9631) discussed in this document are Web-based, IPv6 Ready products.

Related documents

The Network Management Card *Utility* CD contains the following documentation:

- *UPS Network Management Card 2 User's Guide*
- *Network Management Card Upgrade Utilities*
- *Security Handbook*
- *PowerNet® Management Information Base (*MIB) *Reference Guide*

Inventory

The Network Management Card package includes the following items:

- This *Installation Manual*
- UPS Network Management Card 2
- UPS Network Management Card 2 Utility CD
- Serial configuration cable (940-0299)
- Temperature sensor (AP9335T)—AP9631 Network Management Card only
- Network Management Card quality assurance test slip
- Declaration of Conformity
- Warranty registration form

The quality assurance test slip contains the MAC address that you may need when performing the procedures in "Device IP Configuration Utility" on page 10. You can also find the MAC address on the back of your UPS.

Disclaimer

Schneider Electric is not responsible for damage sustained during reshipment of this product.

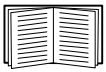
The Network Management Card (NMC) is sensitive to static electricity. When handling the NMC, touch only the end plate while using one or more of these electrostatic-discharge devices (ESDs): wrist straps, heel straps, toe straps, or conductive shoes.

Please recycle

The shipping materials are recyclable. Save them for later use, or dispose of them appropriately.

Management products, including the NMC, contain removable, lithium coin-cell batteries. When discarding these batteries, you must follow local rules for recycling.

Language Packs



If the language you want to use with the NMC Web interface is not available, you should download a language pack. See “Adding and Changing Language Packs” in the User’s Guide. (Language packs are not available for all UPS devices).

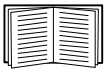
Installation in a UPS

How to install the card for different UPS models

You can install the UPS Network Management Card (NMC) in a card slot in a Smart-UPS, Symmetra UPS, Galaxy 300, Galaxy 3500, or Galaxy 7000.

You cannot install this NMC in a Symmetra PX 250 or Symmetra PX 500 UPS.

In a Symmetra UPS that uses more than one management product, you *must* install the management products in the correct order for them to operate properly.



See “How to Install Multiple Management Cards” on page 21.

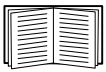
You do not need to turn off power to install a Symmetra UPS.

Step 1: Turn off power (Smart-UPS)

Damage to the UPS or the NMC can result if you do not remove all AC and DC power from a Smart-UPS.

Step 2: Install the Network Management Card

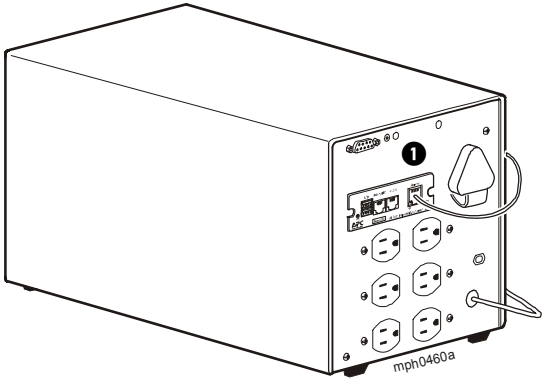
The NMC is sensitive to static electricity. When handling the NMC, touch only the end plate while using one or more of these electrostatic-discharge devices (ESDs): wrist straps, heel straps, toe straps, or conductive shoes.



For the location of the UPS card slot, see the UPS documentation.

1. Locate the UPS card slot.
2. Use the same screws that hold the slot cover in place to secure the NMC in the UPS card slot.

3. Connect a network interface cable to the 10/100Base-T network connector ❶ on the NMC.



Step 3: Restore power to the card slot

To restore power to the card slot and energize the NMC, reconnect the UPS to its input power source and then turn on the UPS

Step 4: Configure the Network Management Card

See “Quick Configuration” on page 9.

Expansion/Triple Chassis Installation

When to use an Expansion Chassis

Use an Expansion Chassis or a Triple Expansion Chassis if the UPS has no card slot available.

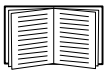
When you install the UPS Network Management Card (NMC) in the chassis, the NMC communicates with the UPS through the cable connection between the chassis and the UPS.

When to use the AC adapter (AP9505)

Use the optional AC adapter with a chassis under the following circumstances:

- To connect the chassis to an independent AC input so that the NMC can continue to operate if the UPS is turned off or not operating.
- To provide the management products mounted in a Triple Expansion Chassis with more current than the UPS can provide through the UPS-to-chassis cable.

A Smart-UPS or Symmetra UPS can provide up to 200 mA.



For information about the current requirements for management products, see “How to Install Multiple Management Cards” on page 21.

Step 1: Disconnect the chassis from all power

Make sure that the Expansion Chassis or Triple Expansion Chassis is disconnected from any power source:

1. Disconnect the chassis cable from the UPS.
2. If the chassis uses an AC adapter (AP9505), disconnect that adapter from the chassis.

Step 2: Install the Network Management Card

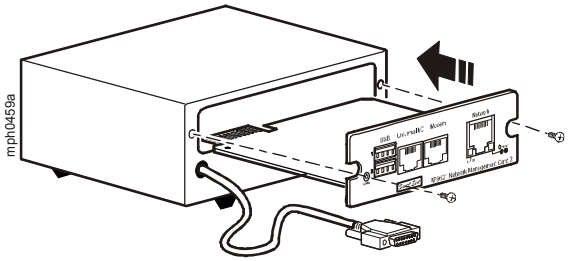
If the UPS uses multiple management products, you must install them in the correct order for them to operate properly.

See “How to Install Multiple Management Cards” on page 21.

The UPS Network Management Card (NMC) is sensitive to static electricity. When handling the NMC, touch only the end plate while using one or more of these electrostatic-discharge devices (ESDs): wrist straps, heel straps, toe straps, or conductive shoes.

If a cable is connected to the serial port at the UPS or chassis, stop the APC service that uses that serial connection, and disconnect the cable.

1. If you are installing a chassis, connect the chassis to the UPS serial port.
2. Use the same screws that hold the expansion slot cover in place to secure the NMC in the chassis slot.



3. Connect a network interface cable to the 10/100Base-T network connector on the front panel of the NMC.
4. If you are using the AC Adapter (AP9505), connect the adapter to the chassis. Then connect the adapter to an independent AC input so that the NMC can continue to operate if the UPS is turned off or not operating.
5. If you disconnected a cable in step 1, reconnect that cable to the serial port at the chassis, and restart the associated APC service.
6. See “Quick Configuration” on page 9.

Quick Configuration

Overview

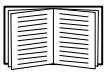
Disregard the procedures described in this chapter if you have StruxureWare Central as part of your system. See the documentation for your StruxureWare device for more information.

You must configure the following TCP/IP settings before the UPS Network Management Card (NMC) can operate on a network:

- IP address of the NMC
- Subnet mask
- Default gateway

If a default gateway is unavailable, use the IP address of a computer that is located on the same subnet as the NMC and that is usually running. The NMC uses the default gateway to test the network when traffic is very light.

Do not use the loopback address (127.0.0.1) as the default gateway address for the NMC. It disables the card and requires you to reset TCP/IP settings to their defaults using a local serial login.



See “Watchdog Features” in the “Introduction” of the NMC *User’s Guide* for more information about the watchdog role of the default gateway.

TCP/IP configuration methods

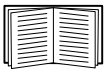
Use one of the following methods to define the TCP/IP settings needed by the Network Management Card for IPv4:

- “Device IP Configuration Utility” on page 10
- “How to Recover from a Lost Password” on page 15
- Networked computer:
  - “Local access to the command line interface” on page 12
  - “Remote access to the command line interface” on page 13

Device IP Configuration Utility

The Device IP Configuration Utility can discover Network Management Cards (NMC) that do not have an IP address assigned. Once discovered, you can configure the IP address settings for the cards.

You can also search for devices already on the network by entering an IP range to define the search. The Utility scans the IP addresses in the defined range and discovers cards that already have a DHCP-assigned IP address.



For detailed information on the Utility, see the Knowledge Base on the support page of the www.apc.com website and search for FA156064 (the ID of the relevant article). To use the DHCP Option 12 (AOS 5.1.5 or higher), see Knowledge Base ID FA156110.

System requirements. The Utility runs on Microsoft Windows 2000, Windows Server® 2003, Windows Server 2012 and on both 32- and 64-bit versions of Windows XP, Windows Vista, Windows 2008, Windows 7 and Windows 8 operating systems.

This utility supports cards that have firmware version 3.0.x or higher and is for IPv4 only.

Installation. To install the Utility from the *Utility* CD:

1. If autorun is enabled, the user interface of the CD starts when you insert the CD. Otherwise, open the file **contents.htm** on the CD.
2. Click **Device IP Configuration Utility** and follow the instructions.

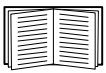
To install the Utility from a downloaded executable file:

1. Go to www.apc.com/tools/download.
2. Download the Device IP Configuration Utility.
3. Run the executable file in the folder to which you downloaded it.

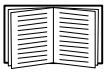
When installed, the Utility is available through the Windows menu options.

DHCP and BOOTP configuration

The default TCP/IP configuration setting, **DHCP**, assumes that a properly configured DHCP server is available to provide TCP/IP settings to Network Management Cards. You can also configure the setting for BOOTP.



A user configuration (.ini) file can function as a BOOTP or DHCP boot file. For more information, see the TCP/IP configuration section of the Network Management Card *User's Guide*, available from the *Utility* CD or the APC Web site, www.apc.com.



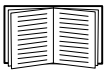
If neither of these servers is available, see “Device IP Configuration Utility” on page 10, “Local access to the command line interface” on page 12, or “Remote access to the command line interface” on page 13 to configure the needed TCP/IP settings.

BOOTP. For the Network Management Card to use a BOOTP server to configure its TCP/IP settings, it must find a properly configured RFC951-compliant BOOTP server.

In the BOOTPTAB file of the BOOTP server, enter the Network Management Card’s MAC address, IP address, subnet mask, and default gateway, and, optionally, a bootup file name. Look for the MAC address on the bottom of the Network Management Card or on the Quality Assurance slip included in the package.

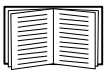
When the Network Management Card reboots, the BOOTP server provides it with the TCP/IP settings.

- If you specified a bootup file name, the Network Management Card attempts to transfer that file from the BOOTP server using TFTP or FTP. The Network Management Card assumes all settings specified in the bootup file.
- If you did not specify a bootup file name, you can configure the other settings of the Network Management Card remotely through its Web interface or command line interface; the user name and password are both **apc**, by default.



To create a bootup file, see your BOOTP server documentation.

DHCP. You can use an RFC2131/RFC2132-compliant DHCP server to configure the TCP/IP settings for the Network Management Card (NMC).



This section summarizes the NMC’s communication with a DHCP server. For more detail about how a DHCP server can configure the network settings for a Network Management Card, see the NMC *User’s Guide* on the *Utility* CD or on the website.

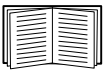
1. The NMC sends out a DHCP request that uses the following to identify itself:
   - A Vendor Class Identifier (APC by default)
   - A Client Identifier (by default, the MAC address of the NMC)
   - A User Class Identifier (by default, the identification of the application firmware installed on the NMC)

2. A properly configured DHCP server responds with a DHCP offer that includes all the settings that the NMC needs for network communication. The DHCP offer also includes the Vendor Specific Information option (DHCP option 43). The NMC can be configured to ignore DHCP offers that do not encapsulate the APC cookie in DHCP option 43 using the following hexadecimal format. (The card does not require this cookie by default).

   ```
   Option 43 = 01 04 31 41 50 43
   ```

   where

   – the first byte (`01`) is the code
   – the second byte (`04`) is the length
   – the remaining bytes (`31 41 50 43`) are the APC cookie.



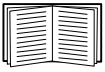
See your DHCP server documentation to add code to the Vendor Specific Information option.

The NMC Web interface has options to utilize vendor-specific data to require the DHCP server to provide an “APC” cookie which will supply information to the NMC. See the User’s Guide for information.

Local access to the command line interface

You can use a computer connected to the serial port on the front of the Network Management Card to access the command line interface.

1. Select a serial port at the local computer, and disable any service that uses that port.
2. Use the provided serial cable (part number 940-0299) to connect the selected port to the serial port on the front panel of the Network Management Card.
3. Run a terminal program (such as HyperTerminal, TeraTerm, PuTTY) and configure the selected port for 9600 bps, 8 data bits, no parity, 1 stop bit, and no flow control. Save the changes.
4. Press ENTER, repeatedly if necessary, to display the **User Name** prompt.
5. Use **apc** for the user name and password.



See “Command line interface” on page 14 to finish the configuration.

Remote access to the command line interface

From any computer on the same network as the Network Management Card, you can use ARP and Ping to assign an IP address to the Network Management Card, and then use Telnet to access its command line interface and configure the other TCP/IP settings.

After the Network Management Card has its IP address configured, you can use Telnet, without first using ARP and Ping, to access that Network Management Card.

1. Use the MAC address of the Network Management Card in the ARP command to define the IP address.

   Note: Look for the MAC address on the bottom of the Network Management Card or on the Quality Assurance slip included in the package.

   For example, to define 156.205.14.141 as the IP address of a Network Management Card with 00 c0 b7 63 9f 67 as its MAC address, use one of the following commands:

   – Windows command format:

   ```
   arp -s 156.205.14.141 00-c0-b7-63-9f-67
   ```

   – LINUX command format:

   ```
   arp -s 156.205.14.141 00:c0:b7:63:9f:67
   ```

2. Use Ping with a size of 113 bytes to assign the IP address defined by the ARP command. For the IP address defined in step 1, use one of the following commands:

   – Windows command format:

   ```
   ping 156.205.14.141 -l 113
   ```

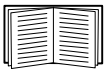
   – LINUX command format:

   ```
   ping 156.205.14.141 -s 113
   ```

3. Use Telnet to access the Network Management Card at its newly assigned IP address. For example:

   ```
   telnet 156.205.14.141
   ```

4. Use **apc** for both user name and password.



See “Command line interface” on page 14 to finish the configuration.

Command line interface

After you log on at the command line interface, as described in “Local access to the command line interface” on page 12 or “Remote access to the command line interface” on page 13, you can manually configure network settings.

1. Contact your network administrator to obtain the IP address, subnet mask, and default gateway for the Network Management Card.
2. Use these three commands to configure network settings. (Text in italics indicates a variable.)
   a. `tcpip -i yourIPaddress`
   b. `tcpip -s yourSubnetMask`
   c. `tcpip -g yourDefaultGateway`

   For each variable, type a numeric value that has the format *xxx.xxx.xxx.xxx*.

   For example, to set a system IP address of 156.205.14.141, type the following command and press ENTER:
   `tcpip -i 156.205.14.141`
3. Type `reboot`. The Network Management Card restarts to apply the changes.

.INI file utility

You can use the .INI file export utility to export .INI file settings from configured NMCs to one or more unconfigured NMCs. The utility and documentation are included on the Network Management Card *Utility* CD.

How to Recover from a Lost Password

You can use a local computer that connects to the Network Management Card through the serial port to access the command line interface.

1. Select a serial port at the local computer, and disable any service that uses that port.
2. Connect the provided serial cable (part number 940-0299) to the selected port at the computer and to the configuration port at the Network Management Card.
3. Run a terminal program (such as HyperTerminal®) and configure the selected port for 9600 bps, 8 data bits, no parity, 1 stop bit, and no flow control.
4. Press ENTER, repeatedly if necessary, to display the **User Name** prompt. If you are unable to display the **User Name** prompt, verify the following:
   - The serial port is not in use by another application.
   - The terminal settings are correct as specified in step 3.
   - The correct cable is being used as specified in step 2.
5. Press the **Reset** button. The Status LED will flash alternately orange and green. Press the **Reset** button a second time immediately while the LED is flashing to reset the user name and password to their defaults temporarily.
6. Press ENTER, repeatedly if necessary, to display the **User Name** prompt again, then use the default, **apc**, for the user name and password. (If you take longer than 30 seconds to log on after the **User Name** prompt is redisplayed, you must repeat step 5 and log on again.)
7. At the command line interface, use the following commands to change the **Password** setting, which is **apc** at this stage:

   ```
   user -n <user name> -pw <user password>
   ```

   For example, to change the Super User password to **XYZ**, type:

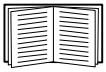
   ```
   user -n apc -pw XYZ
   ```

8. Type `quit` or `exit` to log off, reconnect any serial cable you disconnected, and restart any service you disabled.

How to Access a Configured Network Management Card

Overview

After the UPS Network Management Card (NMC) is running on your network, you can use the interfaces summarized here: Web interface, Telnet and SSH, SNMP, FTP, and SCP.



For more information about the interfaces, see the *User's Guide*.

Web interface

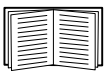
Use Microsoft Internet Explorer® (IE) 7.x or higher (on Windows operating systems only) or Mozilla® Firefox® 3.0.6 or higher (on all operating systems) to access the Web interface of the Network Management Card. Other commonly available browsers may work but have not been fully tested by APC.

You can use either of the following protocols when you use the Web interface:

- The HTTP protocol (enabled by default), which provides authentication by user name and password but no encryption.
- The HTTPS protocol, which provides extra security through Secure Socket Layer (SSL); encrypts user names, passwords, and data being transmitted; and authenticates Network Management Cards by means of digital certificates.

To access the Web interface and configure the security of your device on the network:

1. Address the Network Management Card by its IP address (or its DNS name, if a DNS name is configured).
2. Enter the user name and password (by default, **apc** and **apc** for an Administrator).
3. To enable or disable the HTTP or HTTPS protocol, use the NMC Web interface.



See the *Security Handbook*, available on the Network Management Card *Utility* CD or from the APC Web site, www.apc.com, for more information on selecting and configuring network security.

Telnet and SSH

You can access the command line interface through Telnet or Secure SHell (SSH), depending on which is enabled. To enable these access methods, use the NMC Web interface. By default, Telnet is enabled.

Telnet for basic access. Telnet provides the basic security of authentication by user name and password, but not the high-security benefits of encryption. To use Telnet to access the command line interface of the Network Management Card from any computer on the same subnet:

1. At a command prompt, use the following command line, and press ENTER:

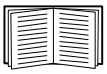
   `telnet address`

   As `address`, use the Network Management Card's IP address (or DNS name, if configured).

2. Enter the user name and password (by default, **apc** and **apc** for an Administrator, or **device** and **apc** for a Device User).

SSH for high-security access. If you use the high security of SSL for the Web interface, use Secure SHell (SSH) for access to the command line interface. SSH encrypts user names, passwords, and transmitted data.

The interface, user accounts, and user access rights are the same whether you access the command line interface through SSH or Telnet, but to use SSH, you must first configure SSH and have an SSH client program installed on your computer.



See the *User's Guide* for more information on configuring and using SSH.

Simple Network Management Protocol (SNMP)

SNMPv1 only. After you add the PowerNet® MIB to a standard SNMP MIB browser, you can use that browser to access the Network Management Card. All user names, passwords, and community names for SNMP are transferred over the network as plain text. The default read community name is **public**; the default read/write community name is **private**.

SNMPv3 only. For SNMP GETs, SETs, and trap receivers, SNMPv3 uses a system of user profiles to identify users. An SNMPv3 user must have a user profile assigned in the MIB software program to perform GETs and SETs, browse the MIB, and receive traps. The default settings are **no authentication** and **no privacy**.

To use SNMPv3, you must have a MIB program that supports SNMPv3.

The Network Management Card supports SHA or MD5 authentication and AES or DES encryption.

SNMPv1 and SNMPv3. To use StruxureWare Central to manage the Network Management Card on the public network of an StruxureWare system, you must have SNMPv1 enabled in the unit interface. Read access allows StruxureWare Central to receive traps from the Network Management Card. Write access is required while you set StruxureWare Central as a trap receiver.

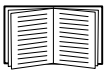
To enable or disable SNMP access, you must be an Administrator. Use the NMC Web interface to set it up.

FTP and SCP

You can use FTP (enabled by default) or SCP to transfer downloaded firmware to the Network Management Card, or to access a copy of the Network Management Card's event or data logs.

To use StruxureWare Central to manage the UPS, you must have the **FTP Server** option enabled in the Network Management Card interface.

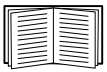
To enable or disable FTP server access, you must be an Administrator. Use the NMC Web interface to set it up.



To transfer firmware, see the *User's Guide*.

To retrieve a copy of the event or data log, see the *User's Guide*.

Manage the security of your system



For detailed information on enhancing the security of your system after installation and initial configuration, see the *Security Handbook*, available on the Network Management Card *Utility* CD and on the APC Web site, www.apc.com.

How to Install Multiple Management Cards

Overview

When installing more than one management card, such as the Network Management Card (NMC), the Out-of-Band Management Card, etc., you must install the cards in the order described in this document. This is because they share a serial link with the UPS. Installing the cards in any other order might result in operational failure.

Before you start

The following table identifies the priority of the cards you will be installing. Management cards that have more control over the UPS have higher priority.

- Level 6: Exerts total control
- Level 5: Exerts wide, but not total, control
- Level 4: Exerts limited control
- Level 3: Passes commands to the UPS
- Level 2: Exerts no control
- Level 1: Exerts no control and must be installed closest to the UPS

Management Card	Priority
Network Management Card[1] (AP9630, AP9631)	Level 6
Out-of-Band Management Card (AP9608)	Level 5
Relay I/O Module (AP9613, AP9610)	Level 4
Interface Expander Card (AP9607)	Level 3
Building Management Integration Card[2] (AP9622)	Level 2
Environmental Monitoring Card	Level 1
1. Attach no more than two Network Management Cards to a UPS. 2. Attach only one Building Management Integration Card to a UPS.	

Two models of expansion chassis

If you need management card slots in addition to those in your UPS, use one or more expansion chassis available.

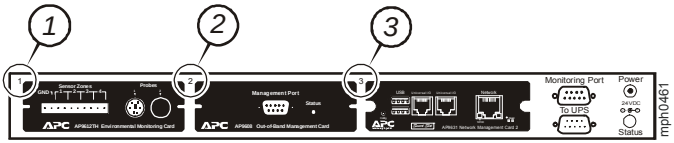
Chassis	Compatible UPS Devices
Expansion Chassis (AP9600), one slot	UPS devices that are not installed in a rack or enclosure.

Chassis	Compatible UPS Devices
Triple Expansion Chassis (AP9604BLK), three slots	All UPS devices

Installing cards in an expansion chassis

Install the lowest-priority cards in any available card slots in the UPS, and then use an expansion chassis for remaining higher-priority cards. In a Triple Expansion Chassis:

- Install each card, starting with the lowest priority (see “Before you start” on page 21) in the lowest-numbered slot.
- If you are installing an NMC, install it in slot 3, even if you are leaving another slot empty.



Installing cards in an expansion chassis set up serially

If you have increased your management card capacity by connecting multiple expansion chassis serially (in a cascading setup), install the NMC in the highest-numbered slot, and the Out-of-Band Management Card in the second-highest-numbered slot of the chassis installed farthest from the UPS.

Warning: Do not attach more than two NMCs or one Building Management Integration Card to a UPS.

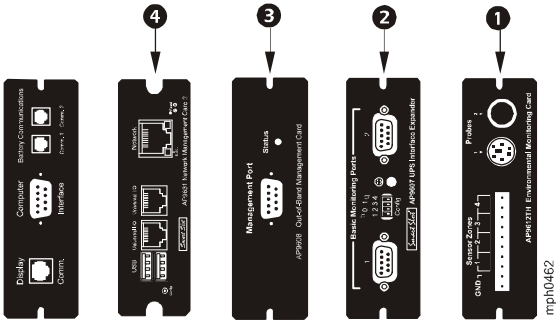
If the NMC is pre-installed in the UPS, refer instead to “When an NMC has been pre-installed.” on page 23

Installing cards in a Symmetra UPS

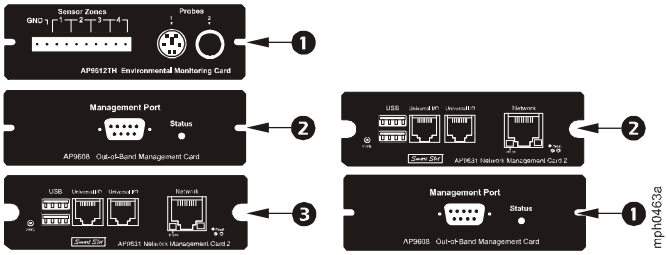
If you are installing an NMC without an attached expansion chassis, install that card in the highest numbered slot, even if you are leaving other slots empty. If you are using an expansion chassis, see “Installing cards in an expansion chassis” on page 22.

For Symmetra models with 4, 3, or 2 slots, install each card, starting with the lowest priority (as listed in the table on page 21) in the lowest numbered slot. Use the following illustrations to determine model-specific slot numbering.

- When 4 slots are available, arranged in a horizontal row, the lowest-numbered slot is at the right.



- When slots are arranged in a vertical column:
  - If 3 slots are available, the lowest-numbered slot is at the top (as shown in the following illustration).
  - If 2 slots are available, the lowest-numbered slot is at the bottom (as shown in the following illustration).



When an NMC has been pre-installed. For Symmetra UPS models that are shipped with a Network Management Card already installed (such as Symmetra RM models), the UPS itself may have only one remaining card slot available. Referring to the table on page 1, install the lowest priority card in the UPS and use one or more expansion chassis for any other cards, as described beginning on page 2.

To use an Out-of-Band Management Card, install it in the highest-numbered slot of the expansion chassis farthest from the UPS.

Specifications

Physical	
Size (H x W x D)	38.1 x 120.7 x 108.0 mm (1.50 x 4.75 x 4.25 in)
Weight	0.14 kg (0.30 lb)
Shipping weight	0.91 kg (2.00 lb)

Environmental	
Elevation (above MSL)	
Operating	0 to 3000 m (0 to 10,000 ft)
Storage	0 to 15 000 m (0 to 50,000 ft)
Temperature	
Operating	0 to 45 °C (32 to 113°F)
Storage	-5 to 45°C (23 to 113°F)
Operating humidity	0 to 95%, non-condensing

Regulatory compliance	
Radiated emissions	FCC Class A, VCCI Class A, ICES-003 Class A, EN 55022 Class A, AS/NZS CISPR 22, GOST-R 51318.22
Radiated immunity	GOST-R 51318.24, EN 55024

Radio Frequency Interference

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

USA—FCC

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this user manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference. The user will bear sole responsibility for correcting such interference.

Canada—ICES

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Japan—VCCI

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラス A 情報技術装置です。この装置を家庭環境で使用すると、電波妨害を引き起こすことがあります。この場合には、使用者が適切な対策を講ずるように要求されることがあります。

Taiwan—BSMI

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Australia and New Zealand

Attention: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

European Union

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. APC cannot accept responsibility for any failure to satisfy the protection requirements resulting from an unapproved modification of the product.

This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to CISPR 22/European Standard EN 55022. The limits for Class A equipment were derived for commercial and industrial environments to provide a reasonable protection against interference with licensed communication equipment.

Attention: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Worldwide Customer Support

Customer support for this or any other product is available at no charge in any of the following ways:

- Visit the APC Web site to access documents in the APC Knowledge Base and to submit customer support requests.
  - www.apc.com (Corporate Headquarters)
    Connect to localized APC Web sites for specific countries, each of which provides customer support information.
  - www.apc.com/support/
    Global support searching APC Knowledge Base and using e-support.
- Contact the APC Customer Support Center by telephone or e-mail.
  - Local, country-specific centers: go to www.apc.com/support/contact for contact information.

For information on how to obtain local customer support, contact the representative or other distributors from whom you purchased your product.

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